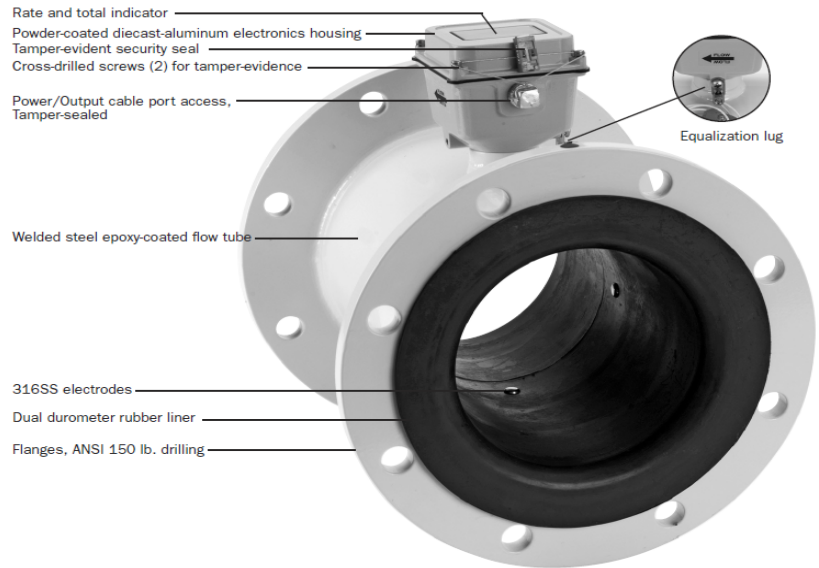


FEATURES

- **Unobstructed flow.**
- **No moving parts.**
- **Internal Battery or external powered options.**
- **Built-in flowrate and total indicator.**
- **Minimal straight pipe required.**
- **Optional Pulse Output (externally powered model).**
- **Tamper-evident seal.**



The SM series flowmeters are internal battery powered electromagnetic flowmeters for use in irrigation applications.

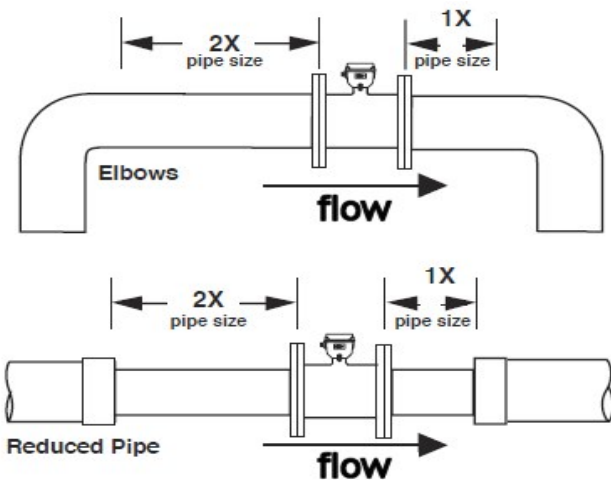
Because there are no mechanical parts in the flow stream and being an obstructionless bore, the meter tolerates high flowrates with no headlosses, providing virtually maintenance-free operation. Also, the flowmeter is not blocked by dirty water or particles.

The electronics housing is made of rugged powder-coated die-cast aluminum. A weather guard is provided to protect the LCD.

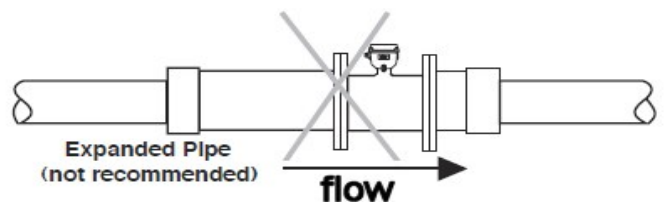
The LCD display shows flowrate and total.

SM flowmeters are available as either battery-operated units or as external DC powered units with a pulse output facility for logging applications. The batteries are user replaceable with an approximate 5-year life in typical irrigation usage. A anti-tamper lead seal is provided and in the event of power failure or replacement of batteries the settings and totals are retained in non-volatile memory.

With no moving parts, the flowmeter permits unobstructed flow, minimizing flow disturbances and hence straight pipe requirements. SM flowmeters can be used in piping configurations where there is little space between the meter and an elbow or valve.

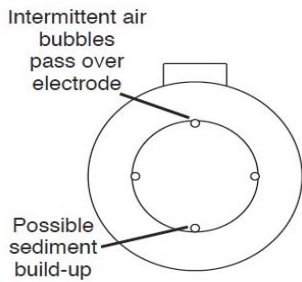


MINIMUM STRAIGHT PIPE REQUIREMENTS

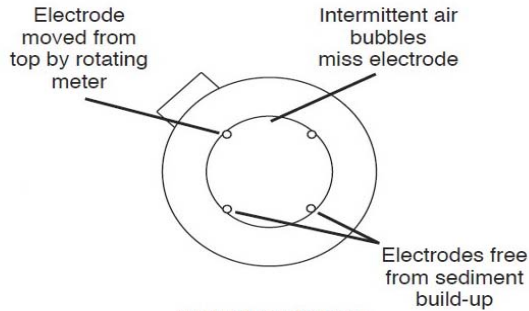


INSTALLATION

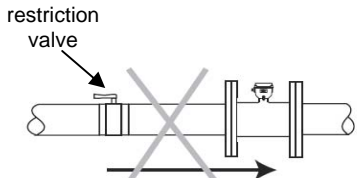
- **Calibration.** The SM flowmeter is factory calibrated and cannot be recalibrated in the field.
- **Positioning the Meter.** These meters can be installed horizontally, vertically, and in any radial position. If sludge accumulation is possible, vertical or horizontal placement with the register at a 45° angle may be preferred
- **Full Pipe Recommendations.** All magmeters require a method for determining that the pipe is empty, to prevent false reading. This meter is designed to go to zero reading if one or more electrodes is exposed. For highest accuracy, install the meter so that the pipe will be full when there is flow. If air bubbles may be present in the pipe, rotate the meter by one flange hole to position the control housing at a 45° angle. See mounting diagrams below.



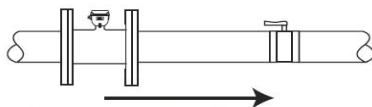
Possible Problem:
Air bubbles and sediment on the electrodes can affect accuracy.



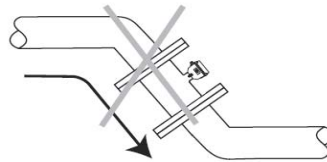
Better Installation:
Improved accuracy results from unimpeded electrodes.



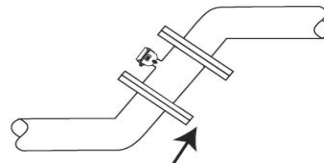
Possible Problem: Air pockets, accuracy loss, empty pipe reading



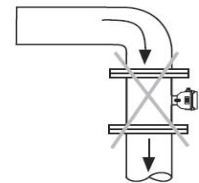
Better Installation: Keeps pipe full at sensor for accuracy and prevents cavitation



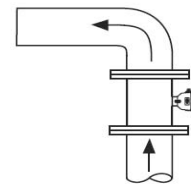
Possible Problem: Air can be trapped, loss of accuracy, cavitation problems



Better Installation: Allows air to bleed off, higher accuracy



Not Recommended: Vertical downflow, open discharge



Better Installation: Vertical upflow with full pipe

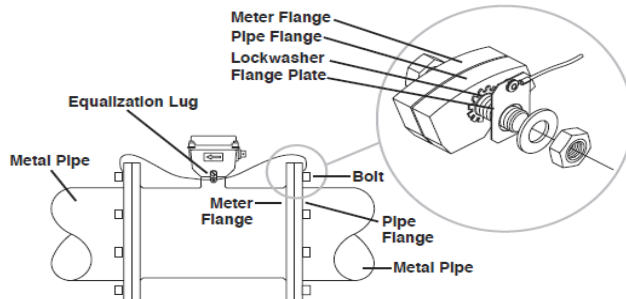
EQUALIZATION and GROUNDING

Metal Pipe Installations. To equalize the electric potential of the fluid, the meter, and the surrounding pipe, secure the flange plates, factory-installed on equalization lug, to both pipe flanges at one of the bolt holes. Be sure the lockwasher provided fits between the pipe flange and the flange plate.



WARNING: ELECTRICAL SHOCK HAZARD

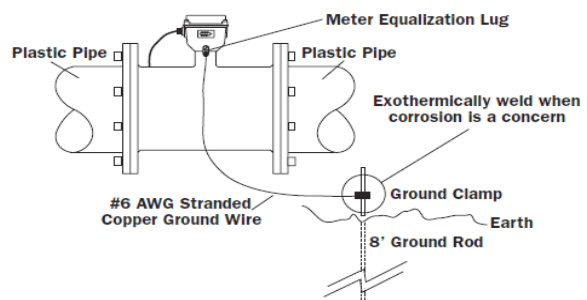
When the AG2000 is installed in a plastic piping system, or when externally powered, it is very important to ground the meter to avoid electrical shock hazard. Failure to do so can result in electrocution.



Equalization Diagram

Run wire from equalization lug to both pipe flanges; secure flange plates under bolt heads as shown.

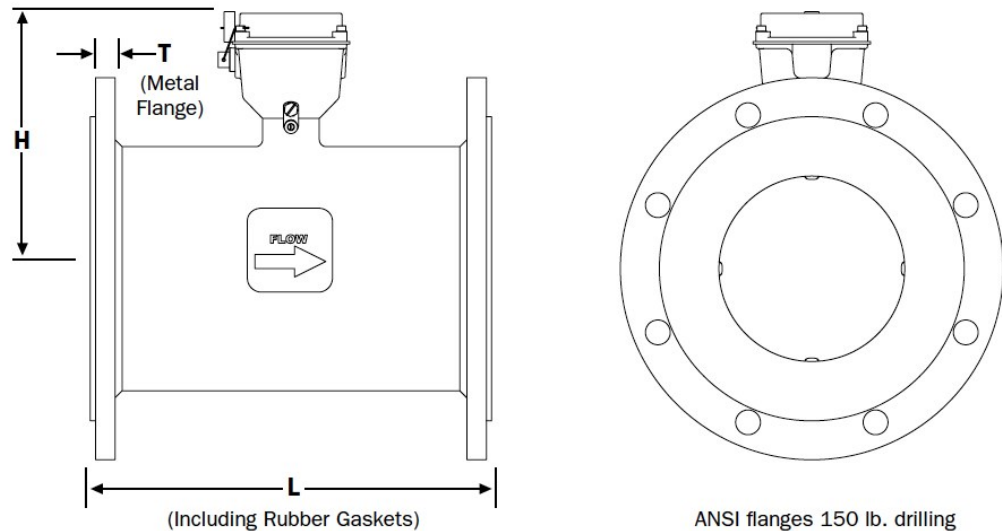
Plastic Pipe Installations. In plastic pipe it is not necessary to use the equalization straps, but the meter must be grounded to avoid electrical shock and electrostatic interference with meter function.



SPECIFICATIONS

Fittings	Flanges, ANSI 150lb drilling	
Pressure	10.3 bar (1030 kPa, 150 psi) working pressure	
Operating temperature range	-12 °C to 54 °C	
Empty Pipe detection	Hardware/software, conductivity-based	
Conductivity of measured liquid	>20 microSiemens	
Environmental	NEMA 4X standard	
Accuracy	±1% at 100% to 10% of reading ±2% at 10% of reading to cut off	
Materials	Body	Welded steel, epoxy-coated
	Liner	Dual durometer rubber
	Electrodes	316 Stainless Steel
	Electronics Housing	Diecast aluminum, powder-coated
LCD Display	Standard	Flowrate: 6 digits, Litres/min; Total: 8 digits, m ³ (1 decimal place)
	Optional alternate	Flowrate: 6 digits, Litres/sec; Total: 8 digits, ML (1 decimal place)
Power	2 Lithium 3.6V "D" batteries. Replaceable. 5 year life in typical irrigation. <u>Optional:</u> 7 - 26 VDC 30mA externally powered model with pulse output. Lithium batteries serve as backup in power failure (10 year life).	
Optional Pulse Output (external powered only)	10 Litres/pulse. Current sinking pulse, opto isolated, 24VDC @10mA max Length of supplied pulse cable: 6 metres	

DIMENSIONS



ORDER CODES

Order Code #	Size mm	Flowrange Litres/min	L mm	H mm	T mm	Shipping weight* kg
SM100	100	45 - 1890	260	178	20.9	14.5
SM150	150	120 - 4542	312	206	23.3	21.3
SM200	200	228 - 8328	362	231	23.3	32.2
SM250	250	360 - 13200	257	257	23.3	43.0

For DC-powered option with pulse output, add the suffix -P to the Order Code.

For L/sec and ML display, add the suffix -ML to the Order Code.

* if powered pulse output option is selected, then add 2.2 kg to weight for the pulse output cable

Due to continuous product improvement, specifications are subject to change without notice.